

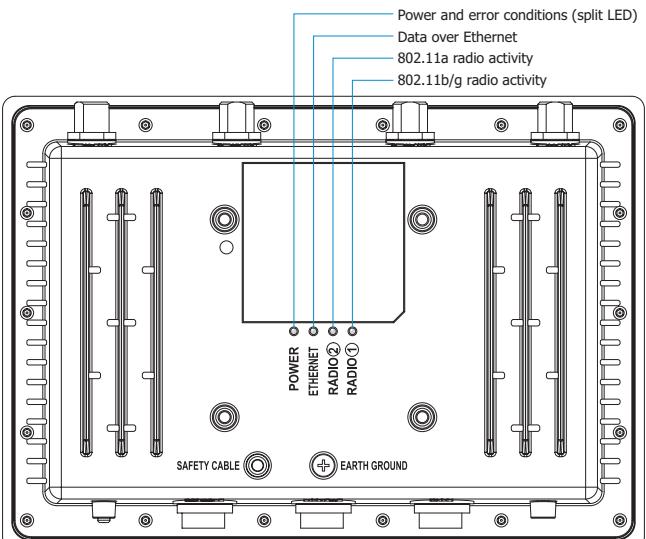


The AP-5181 5.2 GHz antenna suite includes the following models:

Part Number	Antenna Type	Nominal Net Gain (dBi)
ML-5299-FHPA6-01R	Omni-Directional	6.0
ML-5299-FHPA10-01R	Omni-Directional	10.0
ML-2452-PNA7-01R	Panel (Dual-Band)	8.0
ML-2452-PNA5-01R	Sector (Dual-Band)	6.0

## AP-5181 LEDs

The AP-5181 access point has four LEDs matching the functionality of the AP-5131 model access point. However, the AP-5181's LEDs are on the bottom of the access point.



The AP-5181's LEDs have the following display and functionality:

(7)

**Power Status** - Solid **white** indicates the AP-5181 is adequately powered.

**Error Conditions** - Solid **red** indicates the AP-5181 has a problem requiring attention.

**Ethernet Activity** - Flashing **white** indicates data transfers and Ethernet activity.

**802.11a Activity** - Flickering **amber** indicates beacons and data transfers over the radio.

**802.11b/g Activity** - Flickering **green** indicates beacons and data transfers over the radio.

**Note:** When starting the access point in cold weather (below -30°C), there might not be any LED indicator activity, even though the access point may be receiving power.

## Motorola Power Injector Solutions

An AP-5181 model access point receives power via an Ethernet cable connected to the AP-5181's LAN port (using unused pairs).

When users purchase a Motorola WLAN solution, they often need to place access points in obscure locations. In the past, a dedicated power source was required for each access point in addition to the Ethernet infrastructure. This often required an electrical contractor to install power drops at each access point location. An approved solution merges power and Ethernet into one cable, reducing the burden of installation and allows optimal access point placement in respect to the intended radio coverage area.

An AP-5181 model access point can use one of two approved Motorola single-port solutions. Both the Motorola Power Tap (Part No. AP-PSBIAS-5181-01R) and Motorola Power Injector (Part No. AP-PSBIAS-1P2-AFR) are integrated AC-DC converters and Power Injectors using 110-220V AC power to combine low-voltage DC with Ethernet data in a single cable connecting to the AP-5181's LAN port. The Power Tap is a ruggedized solution (designed for outdoor deployments), and may be better suited for an installation prone to wind and rain.

**Caution** - When using the Power Injector, a suitably approved (IEC60950-1) building-point-of-entry (BPE) must be used to protect the indoor equipment against over voltages from outdoor environments.

A Power Injector or Power Tap receives power and is ready for AP-5181 connection and operation as soon as AC power is applied. There is no On/Off switch.

**Caution** - The AP-5181 accepts Power over Ethernet only on un-used pairs. Using the wrong power solution (including a non-compliant POE system or a solution not rated for outdoor use) could severely damage the AP-5181 and void the product warranty.

**Caution** - For Power Tap installations, a electrician is required to open the unit, feed the power cable through the Line AC connector, secure the power cable to the unit's three screw termination block and tighten the unit's Line AC clamp (by hand) to secure the power cable. Only a certified electrician should conduct the installation. Additionally, an electrician must attach a ground cable between the EARTH GROUND connector (on the back of the unit) to a suitable earth ground connection as defined by your local electrical code.

## Customer Support

Motorola provides its customers with prompt and accurate customer support. Use Motorola Support Central as the primary contact for any technical problem, question or support issue involving Motorola products. If the support specialists cannot solve a problem, access to all technical disciplines becomes available for further assistance and support. Motorola Support Central responds to calls by email, telephone or fax within the time limits set forth in individual contractual agreements.

When contacting Motorola Support Central, please provide the following information:

- Serial number of unit
- Model number or product name
- Software type and version number

## North American Contacts

Inside North America, contact Motorola at:

### For sales and product information:

Motorola, Inc.  
One Motorola Plaza  
Holtsville, New York 11742-1300  
Telephone: 1-631-738-2400/1-800-SCAN 234  
Fax: 1-631-738-5990

### For product support and service:

Support Center:  
Telephone: 1-800-653-5350, +1-631-738-6213 (Outside North America)  
Fax: 631-563-5410  
Email: <http://www.symbol.com/support>

(9)

## International Contacts

Outside North America:  
Symbol Place  
Winnersh Triangle, Berkshire, RG41 5TP  
United Kingdom  
Telephone: 0800-328-2424 (Inside UK), +44 118 945 7529 (Outside UK)

## Customer Support Web Sites

Comprehensive on-line support is available at the Web Support Central site at <http://www.symbol.com/support>. Support Central provides our customers with a wealth of information and online assistance including developer tools, software downloads, product manuals and online repair requests.

### Downloads

<http://www.symbol.com/downloads>

### Manuals

<http://www.symbol.com/manuals>

### Additional Information

Obtain additional information at:

- 1-800-722-6234, inside North America
- +1-631-738-5200, in/outside North America
- <http://www.motorola.com/>

(10)

## Regulatory Information

This device is approved under the Symbol Technologies brand; Symbol Technologies, Inc., is the Enterprise Mobility business of Motorola, Inc ("Motorola").

All Motorola devices are designed to be compliant with rules and regulations in locations they are sold and will be labeled as required. Any changes or modifications to Motorola equipment, not expressly approved by Motorola, could void the user's authority to operate the equipment.

When Motorola devices are professionally installed, the Radio Frequency Output Power will not exceed the maximum allowable limit for the country of operation.

Antennas: Use only an approved replacement. Unauthorized antennas, modifications, or attachments could cause damage and may violate regulations.

This guide is available in local languages, translations can be downloaded from the following Website: <http://www.symbol.com/manuals>.

## Country Approvals

Regulatory markings are applied to the device signifying the radio (s) are approved for use in the following countries: United States, Canada and Europe (see Note 1).

Please refer to the *Declaration of Conformity* (DoC) for details of other country markings. This is available at <http://www2.symbol.com/doc/>

**Note 1:** For 2.4GHz Products: Europe includes, Austria, Belgium, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Operation of the device without regulatory approval is illegal.

## Health and Safety Recommendations

### Warnings for the use of Wireless Devices

Please observe all warning notices with regard to the usage of wireless devices.

### Potentially Hazardous Atmospheres

You are reminded to observe restrictions on the use of radio devices in fuel depots, chemical plants etc. and areas where the air contains chemicals or particles (such as grain, dust, or metal powders) and any other area where you would normally be advised to turn off your vehicle engine.

(11)

## Safety in Hospitals

Wireless devices transmit radio frequency energy and may affect medical electrical equipment. When installed adjacent to other equipment, it is advised to verify that the adjacent equipment is not adversely affected.

## FCC / EU RF Exposure Guidelines

### Safety Information

The device complies with internationally recognized standards covering human exposure to electromagnetic fields from radio devices.

### Reducing RF Exposure—Use Properly

It is advisable to use the device only in the normal operating position as described in this guide.

### Remote and Standalone Antenna Configurations

To comply with FCC RF exposure requirements, antennas that are mounted externally at remote locations or operating near users at stand-alone desktop of similar configurations must operate with a minimum separation distance of 20 cm from all persons.

### Power Supply

This device is powered over unused pairs from a compliant power source certified by the appropriate agencies.

### Wireless Devices - Countries

#### Country Selection

Select only the country in which you are using the device. Any other selection will make the operation of this device illegal.

#### Operation in the US

The use on UNII (Unlicensed National Information Infrastructure) Band 1 5150-5250 MHz is restricted to indoor use only, any other use will make the operation of this device illegal.

The available channels for 802.11 b/g operation in the US are Channels 1 to 11. The range of channels is limited by firmware.

(12)

## Radio Frequency Interference Requirements—FCC



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

## Radio Transmitters (Part 15)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## Radio Frequency Interference Requirements – Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## Radio Transmitters

This device complies with RSS 210 of Industry & Science Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that permitted for successful communication.

(13)

This device has been designed to operate with the antennas listed in this guide, and have a maximum gain of 9dBi (2.4GHz) and 10dBi (5GHz). Antennas not included in this list or having a gain greater than 9dBi (2.4GHz) and 10dBi (5GHz) are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

Label Marking: The Term "IC." before the radio certification signifies that Industry Canada technical specifications were met.



## CE Marking and European Economic Area (EEA)

The use of 2.4GHz RLAN's, for use through the EEA, have the following restrictions:

- Maximum radiated transmit power of 100 mW EIRP in the frequency range 2.400 -2.4835 GHz.
- France outside usage, the equipment is restricted to 2.400-2.45 GHz frequency range.
- Italy requires a user license for outside usage.

## Statement of Compliance

Motorola hereby, declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. A Declaration of Conformity may be obtained from <http://www2.symbol.com/doc/>.

## Copyright

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## Patents

This product is covered by one or more of the patents listed on:

[www.symbol.com/patents](http://www.symbol.com/patents)

(14)